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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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Donald E Stout
Stout Uxa Buyan & Mullins LLP
Suite 300
4 Venture
Irvine, CA 92618

EXAMINER

LAO, LUN YI

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,234

Applicant(s)

Guell et al

Examiner

Lun-yi, Lao

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 6-8, 10-14, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hale et al(5,317,394).

As to Claims 1-3, 6-8, 10-14, 17 and 20, Hale et al teach an enhanced vision system for mobile vehicles(aircrafts) comprising an array of vision sensors(71, 72, 73, 74)(each or sensors(71, 72, 73, 74) having a plurality of an array of sensors) mounted on a vehicle(aircraft, 70)(see figures 4-6; column 5, lines 58-68 and column 6, lines 1-9); a recording medium(22) for storing the image signals from the array of vision sensors(71, 72, 73, 74)(see figures 1, 5-6; column 1, lines 10-13; column 3, lines 49-68 and column 4, lines 1-2); a processor(20); a helmet-mounted display and a tracking system(see figure 1 and column 4, lines 1-18).

As to claims 2-3, 6 and 8, Hale et al teach these array of vision sensors(71, 72, 73, 74) is mounted close to the cockpit area and in the upper radome area of the nose of the aircraft(70) (see figures 5-6 and column 6, lines 1-4).

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As to claims 7-8 and 11, Hale et al teach the array of vision sensors(71-74) having an elevational field of view of approximately 24° or having a field of view straddling the horizontal horizon, or hemispherical field of view or a spherical field of view(see figures 5-6 and column 6, lines 1-4).

As to claims 12-14, Hale et al teach one of vision sensors(71-74) providing an infrared search and track function; at least one sensors(71-74) providing a separate signal to the processor(20) and the orientation of the vision sensors(71-74) are different(see figures 1, 5-6; column 1, lines 5-26; column 2, lines 51-68; column 3, lines 1-2, lines 34-35 and lines 53-68; column 4, lines 1-18 and lines 36-64; and column 6, lines 1-4).

As to claim 20, Hale et al teach a manual input device(26)(see figure 1 and column 5-18).

3. Claims 1, 2, 3, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kershner et al(5,838,262).

As to claim 1, Kershner et al teach an enhanced vision system for mobile vehicles(aircrafts) comprising an array of vision sensors(20)(one imaging subsystems having a plurality of FLIR sensors) mounted on a vehicle(aircraft, NS)(see figure 2 and column 6, lines 19-68); a recording medium(20MC) for storing the image signals from the array of vision sensors(20)(see figures 2, 4; column 8, lines 56-68; column 9, lines 1-10); a processor(106)(see figure 4 and column 8, lines 9-20); a helmet-mounted display(30)(see figure 3; column 7, lines 1-36) and a tracking system(40)(see figure 3; column 7, lines 54-68; column 8, lines 1-8 and lines 41-68 and column 9, lines 1-10).

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As to claims 2-3, 6 and 8, Kershner et al teach the array of vision sensors(20) is mounted close to the cockpit area and in the upper radome area of the nose of the aircraft (see figure 2 and column 6, lines 19-47).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Hale et al(5,418,364).

Hale et al(5,317,394) fail to disclose the array of vision sensors having an elevational field of view of approximately 51°.

Hale et al(5,418,364) teach a system having an array of vision sensors(22, 24) having an elevational field of view of approximately 51°(see figure 3 and column 4, lines 27-39). It would have been obvious to have modified Hale et al(5,317,394) with the teaching of Hale et al(5,418,364), so as to eliminate the number of an array of sensors to view same range of field of view.

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6. Claims 4-5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Myrick(5,166,789).

As to claims 4-5 and 15, Hale et al fail to disclose one of the infrared sensors having higher resolution than the others and one of the vision sensors is reward-looking.

Myrick teaches a system having an infrared sensors(12, 14)(infrared camera) having different resolutions(see figures 1-3 and column 6, lines 29-67) and sensor(14) is rearward-looking. It would have Myrick been obvious to have modified Hale et al with the teaching of Myrick, so a view could observe two different images from two camera(one is for viewing a general image(A), one is for viewing a detail image(B or C))(see figure 2 and column 6, lines 33-43).

7. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Muller(4,057,782).

Hale et al fail to disclose an operational parameter of a vehicle.

Muller teaches a system having a group of operation parameters(speed, altitude, attitude and engine status) selected by an operator(see figure 5; column 5, lines 57-68 and column 4, lines 1-14). It would have been obvious to have modified Hale et al with the teaching of Muller, so a pilot would know the operating conditions of an aircraft.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Myrick(5,166,789) and Kaneko(5,237,418).

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Hale et al as modified teach two different images can be displayed on a split screen. Hale et al as modified fail to provide picture-in-picture image on a display.

9. Kaneko teaches a display system for display two different images(P-TV or C-TV) on a picture-in-picture screen mode or a split screen mode(see figures 3, 6 and column 4, lines 19-30). It would have been obvious to have modified Hale et al as modified with the teaching of Kaneko, so a viewer could observe most interested image on a bigger display portion and less interested image on a smaller display portion.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bibbero(3,076,961) teaches a multiple sensor coordinated display apparatus.

Niwa et al(6,101,431) teach a flight system having a plurality of sensors and a HMD position/attitude sensor.

Monroe teaches a record and playback system for aircrafts.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi, Lao whose telephone number is (703) 305-4873.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached at (703) 305-4938.

Art Unit:

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

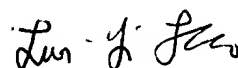
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

November 15, 2002



Lun-Yi Lao
Primary Examiner